

## AMENDMENTS TO THE CLAIMS

Applicants respectfully request the amending of claims 3 and 29 as indicated in the listing of claims below. This listing of claims below will replace all prior versions, and listings, of claims in the application:

Claims 1-2 (canceled)

Claim 3 (currently amended): A ballistic armor, comprising:

at least one body having a front face and a rear face, the front face being the surface upon which a ballistic projectile impinges on said body plate, the body comprising a composite material having a hardness of at least about 1100 kg/mm<sup>2</sup> as measured with a Vickers indenter using a 1 kilogram load, the composite material further comprising

- (a) a matrix comprising silicon carbide crystallites, wherein at least about 90 volume percent of crystallites of said silicon carbide are smaller than about 100 microns in diameter;
- (b) at least 65 percent by volume of a reinforcement phase comprising at least one filler material comprising boron carbide dispersed throughout said matrix; and
- (c) an infiltrant phase comprising silicon dispersed throughout said matrix.

Claim 4 (original): The ballistic armor of claim 3, wherein said at least one filler material comprises a plurality of crystallites, and further wherein at least 90 volume percent of said filler material crystallites are smaller than about 100 microns in diameter.

Claim 5 (original): The ballistic armor of claim 3, wherein said infiltrant phase has dissolved therein at least one substance comprising boron.

Claim 6 (original): The ballistic armor of claim 3, wherein said composite material comprises no more than about 30 percent by volume of said infiltrant phase.

Claim 7 (original): The ballistic armor of claim 3, wherein said matrix comprises no more than about 24 percent by volume of silicon carbide produced in-situ.

Claim 8 (original): The ballistic armor of claim 4, wherein substantially all of said filler material crystallites are smaller than about 106 microns in diameter.

Claim 9 (original): The ballistic armor of claim 4, wherein substantially all of said filler material crystallites are smaller than about 90 microns in diameter.

Claim 10 (original): The ballistic armor of claim 4, wherein at least 90 volume percent of said filler material crystallites are smaller than about 55 microns in diameter.

Claim 11 (original): The ballistic armor of claim 4, wherein at least 85 volume percent of said filler material crystallites are smaller than about 75 microns in diameter.

Claim 12 (original): The ballistic armor of claim 4, wherein at least 97 volume percent of said filler material crystallites are smaller than about 70 microns in diameter.

Claim 13 (previously amended): A ballistic armor, comprising a generally plate-shaped body, the body comprising:

a composite material comprising

- (a) a reinforcement phase comprising boron carbide;
- (b) a matrix comprising silicon carbide; and
- (c) no more than about 30 percent by volume of an infiltrant phase comprising silicon dispersed throughout said matrix phase,

the body furthermore having a mass efficiency of at least about 4.1 when tested under the following conditions:

- 7.62 mm projectile
- unit layers of polymer composite backing material, each of said unit layers consisting of two tapes of unidirectional extended-chain polyethylene fibers in a thermoplastic resin matrix, cross-plyed at right angles to one another
- total armor system areal density of about 29 kg/m<sup>2</sup>
- outer tactical vest simulant comprising 28 plies of 600 denier KM2 blanket comprising rip-stop nylon.

Claim 14 (original): The ballistic armor of claim 13, wherein said body has a four-point flexural strength of at least about 200 MPa.

Claim 15 (original): The ballistic armor of claim 13, wherein said body has a four-point flexural strength of at least about 260 MPa.

Claim 16 (original): The ballistic armor of claim 13, wherein substantially all of said boron carbide is smaller than 45 microns in crystallite size.

Claim 17 (original): The ballistic armor of claim 13, wherein said body has a hardness of at least about 1670 kg/mm<sup>2</sup> as measured with a Vickers indenter using a 1 kg load.

Claim 18 (original): The ballistic armor of claim 17, wherein said composite material further comprises at least 70 percent by volume of said boron carbide.

Claim 19 (original): The ballistic armor of claim 13, wherein at least said matrix and said at least one filler material comprises crystallites, and further wherein no more than about 10 percent of the total volume of said crystallites are larger than about 100 microns in diameter.

Claim 20 (original): The ballistic armor of claim 13, wherein said infiltrant phase has dissolved therein at least one substance comprising boron.

Claims 21-24 (canceled)

Claim 25 (original): The ballistic armor of claim 27, wherein said infiltrant phase has dissolved therein at least one source of boron.

Claim 26 (previously amended): The ballistic armor of claim 13, further comprising a ballistic stopping power of at least 90 % that of armor grade boron carbide when tested under the following conditions:

- 7.62 mm projectile
- unit layers of polymer composite backing material, each of said unit layers consisting of two tapes of unidirectional extended-chain polyethylene fibers in a thermoplastic resin matrix, cross-plyed at right angles to one another
- total armor system areal density of about  $30 \text{ kg/m}^2$
- an outer tactical vest simulant comprising 28 plies of 600 denier KM2 blanket having rip-stop nylon
- armor grade boron carbide plate thickness of about 0.69 cm.

Claims 27 (original): The ballistic armor of claim 3, further comprising a backing layer contacting said rear face of said at least one body.

Claim 28 (original): The ballistic armor of claim 27, wherein said composite material comprises reaction-bonded boron carbide.

Claim 29 (currently amended): The ballistic armor of claim 27, wherein said composite material comprises at least 65 percent by volume of said filler material.

Claim 30 (original): The ballistic armor of claim 27, wherein said backing layer comprises at least one fiber-reinforced plastic material.

Claim 31 (original): The ballistic armor of claim 30, wherein said fiber comprises at least one material selected from the group consisting of polyethylene, aramid and glass.

Claims 32-38 (canceled)